[illegible]

[illegible]

↓

[illegible]

↓

[illegible]

↓

[illegible]

[illegible]

[illegible]1[illegible]

[illegible]2[illegible]

[illegible]3[illegible]

1.

2.

3.

4.

5.

→

□□□ □□□□□□□□

- □2□ □□□□□□□□□□□□□

1

[illegible]

[illegible]

[illegible] 1 [illegible]

[illegible] 2 [illegible]

[illegible] 3 [illegible]

[illegible] 4 [illegible]

[illegible] 5 [illegible]

[illegible]

2 [illegible]

[illegible] ______ [illegible]

[illegible] ______ [illegible]

[illegible]

3

4□□□□□□□□□

1.□□□□□□□□□□□□□□□A, □□□□□□□□a□□□□□AA□A a□aa□□□□□□30□60□10, □□A□a□□□□□□□□□

$A = \frac{30\times2+60}{200} = 60\%$　　$a = \frac{10\times2+60}{200} = $ %

A+a=1

1) □□□□□□□□□□□□□□□

□□□□□
□□□□　$=\frac{□□□□□□□}{□□□□□□□□□□□□□}$

[illegible]

2.AA[illegible]Aa[illegible]aa[illegible]24%[illegible]72%[illegible]4%[illegible] A[illegible]a [illegible] [illegible] [illegible] **D**

A. 36%[illegible]64%　　B. 57%[illegible]43%

C. 24%[illegible]72%　　D. 60%[illegible]40%

A=24% +1/2 X 72% = 60%

2)[illegible]

[illegible]=

[illegible]+1/2[illegible]

[illegible]

1. [illegible] 200 [illegible]
[illegible] 15 [illegible] 5 [illegible] 11 [illegible]
[illegible]

[illegible] = $\dfrac{\text{[illegible]}}{\text{[illegible]}}$

$$X^b = \frac{15+5\times2+11}{600} = 6\%$$

□□

2. □□□□□□□□□□□□□□□□□□□□□□□□

I^AI^A	20%	I^Ai	30%
I^BI^B	10%	I^Bi	20%
I^AI^B	10%	ii	10%

□□ I^B □□□□□□□

10% +1/2□ 10% + 20%□ = 25%

思考与讨论

用数学方法讨论基因频率的变化

1. 假设上述昆虫种群非常大，所有的雌雄个体间都能自由交配并产生后代，没有迁入和迁出，自然选择对翅色这一相对性状没有作用，基因A和a都不产生突变，根据孟德尔的分离定律计算：

(1) 该种群产生的A配子和a配子的比率各是多少？

(2) 子代基因型的频率各是多少？

(3) 子代种群的基因频率各是多少？

(4) 将计算结果填入下表。想一想，子二代、子三代以及若干代以后，种群的基因频率会同子一代一样吗？

亲代基因型的频率	AA(30%)	Aa(60%)		aa(10%)
配子的比率	A(　)	A(　)	a(　)	a(　)
子代基因型频率	AA(　)	Aa(　)		aa(　)
子代基因频率	A(　)		a(　)	

2. 上述计算结果是建立在五个假设条件基础上的。对自然界的种群来说，这五个条件都成立吗？你能举出哪些实例？

3. 如果该种群出现新的突变型（基因型为 A_2a 或 A_2A_2），也就是产生新的等位基因 A_2，种群的基因频率会变化吗？基因 A_2 的频率可能会怎样变化？

[illegible]	AA(30%)	Aa(60%)		aa(10%)
[illegible]	A (30%)	A (30%)	a (30%)	a (10%)
[illegible]	AA 36% ( )	Aa 48% ( )		aa 16% ( )

60% 40%

[illegible]: [illegible]

[illegible] P [illegible] A [illegible] q [illegible] a [illegible]

$p+q = 1$

$(p+q)^2 = p^2+2pq+q^2 =$

$AA = p^2$ $Aa = 2pq$ $aa = q^2$

[illegible]

[illegible] 1/100 [illegible]

[illegible]

[illegible]

[illegible] 2 [illegible]，[illegible]

[illegible] ; [illegible]__

[illegible]

[illegible]	A	60%	60%	60%	60%
	a	40%	40%	40%	40%

□□

3. 已知 A 和 a 为控制人类某一隐性遗传病的等位基因（在常染色体上），在某一地区，基因 a 的频率 q = 1%，请写出基因型 AA、Aa 和 aa 的频率及基因型为 Aa 的杂合体占正常人的比例。

AA%=(99%)^2=98.01%

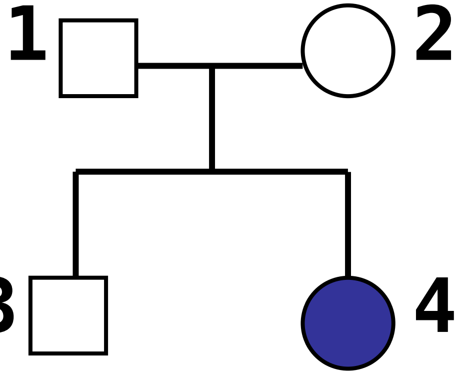
Aa%=2*1%*99%=1.98%

aa%=(1%)^2=0.01%

Aa □□□□□□□□□□ $\dfrac{Aa\%}{AA\%+Aa\%} = 2/101$

[illegible]

4. [illegible] 1 [illegible] 2 [illegible] 3 [illegible] [illegible] 4 [illegible] A [illegible] a [illegible]



[illegible] 1 [illegible] ____________ ; [illegible]

[illegible] 2 [illegible] 3 [illegible] ____________ ; 1/3AA [illegible] 2/3Aa

[illegible] 2 [illegible] 1/10000 [illegible] 3 [illegible] [illegible]
[illegible]

1/303

[illegible]

[illegible] ⑤ [illegible] ⑤ [illegible] A [illegible] a [illegible], [illegible]

[illegible]

[illegible]

[illegible], [illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
  - [illegible]
  - [illegible]
  - [illegible]

[illegible]

[illegible]

[illegible]

[illegible] 10^4 [illegible] 10^{-5} [illegible]
[illegible] 10^8 [illegible]

$$2\times 10^4 \times 10^{-5} \times 10^8 = 2\times 10^7$$

[illegible]

[illegible]

[illegible]

[illegible] → [illegible] → ([illegible]) → [illegible] →

[illegible] → [illegible] →

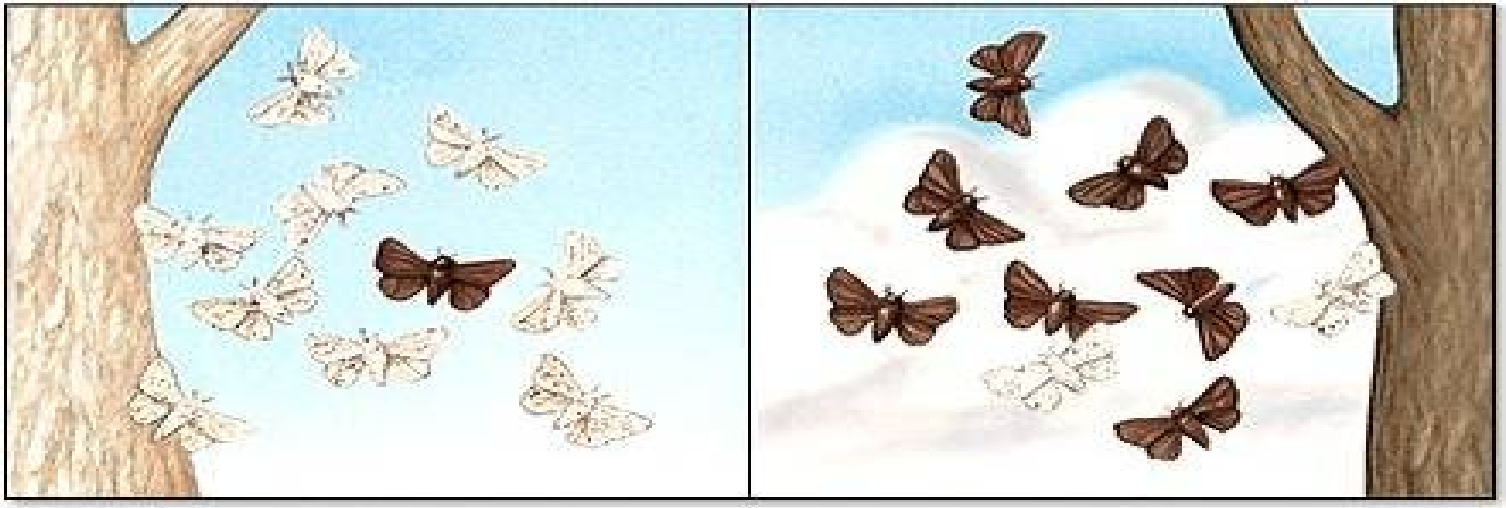
[illegible], [illegible]

[illegible]

[illegible] S [illegible]

[illegible] 1.19 [illegible], [illegible] S [illegible] 5% [illegible] 20 [illegible], [illegible],S [illegible] 95% [illegible]

[illegible] 2.19 [illegible]



19 [illegible]

20 [illegible]

1870 [illegible] SS10% [illegible] Ss20% [illegible] ss70% [illegible] 10% [illegible] 10% [illegible]

[illegible]：[illegible]

[illegible] 10% [illegible] 10%

		[illegible]1[illegible]	[illegible]2[illegible]	[illegible]3[illegible]	[illegible]4[illegible]
[illegible]	SS[illegible]	10 10%			
	Ss[illegible]	20 20%			
	ss[illegible]	70 70%			
	[illegible]	100			
[illegible]					

[illegible]

1.

2.

3.

√

√

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______

______

[illegible]

1. [illegible] √
2. [illegible] ×
3. [illegible] √
4. [illegible] ×
5. [illegible] ×
6. [illegible] √
7. [illegible] ×
8. [illegible] √
9. [illegible] ×
10. [illegible] ×

[illegible]

[illegible]

1 [illegible] 6400 [illegible] 3600 [illegible]

2 [illegible] 7% [illegible]

3200

0.49%

[illegible]

[illegible] AB [illegible]

[illegible]

30%